Safety Data Sheet according to Regulation (EU) No. 1907/2006

SULPHURIC ACID 94-97%

Revision 4.0 Revision Date 01.02.2018 Print Date 01.02.2018

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Commercial Product Name
Sulfuric acid 94-97% Chemical name: Sulphuric acid

Registration number:
01-2119458838-20

1.2 Relevant identified uses of the substance or mixture and uses advised against Use of the Substance/Mixture

Intermediate, Processing aid, Surface treatment, Catalyst, Acidifier.

Recommended restrictions on use
There are no uses advised against.

1.3 Details of the supplier of the safety data sheet

-Company:	Goulding Chemicals Ltd.
-Address:	Centre Park Road, Marina, Cork, Ireland
-Telephone:	+353 (021) 4911611
-Fax:	+353 (021) 4911660
-Contact Email	larry.egar@gouldings.ie

1.4 Emergency number

-Emergency telephone number (outside of office hours): +353 (021) 4911619

SECTION 2: Hazards Identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EU) 1272/2008(CLP)
Skin corrosion; Category 1A; Causes severe skin burns and eye damage.

Classification according to EU Directives 67/548/EEC or 1999/45/EC
Corrosive; Causes severe burns.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :

Signal word : Danger

Hazard statements	: H314	Causes severe skin burns and eye damage.
Precautionary statements	: **Prevention:**	
	P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
	Response:	
	P303 + P361 + P353	IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
	P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P310 Immediately call a POISON CENTER or doctor/physician.
	Storage:	
	P405	Store locked up.

Hazardous components which must be listed on the label:
7664-93-9 Sulfuric acid

Further information : Never add water to this product.

2.3 Other hazards

Advice; Reacts strongly with water, releasing large amounts of heat.

Remarks; This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

SECTION 3: Composition/Information On Ingredients

3.1 Substances

Chemical Name	CAS-No. EINECS-No. / ELINCS No.	Concentration [%]
Sulphuric acid	7664-93-9 231-639-5	> 51

SECTION 4: First Aid Measures

4.1 Description of first aid measures

Inhalation
Move to fresh air. Keep patient warm and at rest. Oxygen or artificial respiration if needed. Call a physician if symptoms occur.

Skin contact

Wash off immediately with plenty of water removing all contaminated clothes and shoes. Call a physician if symptoms occur.

Eye contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.

Ingestion

Rinse mouth. Give small amounts of water to drink. Do NOT induce vomiting. Obtain medical attention.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms : Causes severe burns.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : Rinse with plenty of water.

SECTION 5: Firefighting Measures

5.1 Extinguishing media

Extinguishing media : Sand/Dry powder

Unsuitable extinguishing media : Do not use a powerful water stream as it may cause corrosive liquid to splash.

5.2 Special hazards arising from the substance or mixture Hot acid splashes.

Heating can release hazardous gases.

5.3 Advice for firefighters

In the event of fire, wear self-contained breathing apparatus. Splashproof protective suit.

5.4 Specific methods

The product itself does not burn. Cool containers/tanks with water spray.

SECTION 6: Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

Keep people away from and upwind of spill/leak. Avoid contact with skin and eyes. Wear personal protective equipment. Do not add water into strong acid (risk of splashes).

6.2 Environmental precautions

Should not be released into the environment. Dam up. Soak up with inert absorbent material (e.g. sand, acid binder). Do not use sawdust or inflammable substance.

6.3 Methods and materials for containment and cleaning up

Neutralize with limestone powder and flush with plenty of water. Do not rinse acid into drains that might contain sulphides. Wear personal protective equipment. Dispose of as special waste in compliance with local and national regulations.

SECTION 7: Handling and Storage

7.1 Precautions for safe handling

Handle and open container with care. Do not add water into strong acid (risk of splashes). Wear personal protective equipment. Provide sufficient air exchange and/or exhaust in work rooms. In case of insufficient ventilation, wear suitable respiratory equipment. Ensure that eyewash stations and safety showers are close to the workstation location.

7.2 Conditions for safe storage, including any incompatibilities

Keep in a dry, cool and well-ventilated place. Store in original acid resistant container. Keep away from open flames and hot surfaces. Protect from sunlight.

Materials to avoid:
Flammable materials, Bases, chromates, chlorates, nitrates, Sulphides, Oxidizing agents Paper and cotton carbonize quickly on the influence of sulphuric acid and can catch fire.

7.3 Specific end use(s)

Not applicable

SECTION 8: Exposure Controls/Personal Protection

8.1 Control parameters

8.1.1 Limit values

Ireland:

Sulfuric acid

OELV - 8 hrs (TWA) = 1 mg/m³, : Where no specific short-term exposure limit is listed, a figure three times the long-term exposure limit value should be used

8.2 Exposure controls

8.2.1 Appropriate engineering controls

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. Ensure that eyewash stations and safety showers are close to the workstation location.

8.2.2 Individual protection measures, such as personal protective equipment

Hand protection

Glove material: butyl-rubber, Break through time: 8 h, > 70% sulphuric acid
Glove material: Polyethylene, Break through time: 8 h, > 70% sulphuric acid Glove material: Viton (R), Break through time: 4 h, > 70% sulphuric acid

Eye protection

Tightly fitting safety goggles and face-shield.

Skin and body protection

Protective suit
If splashes are likely to occur, wear: apron and boots

Respiratory protection
In case of insufficient ventilation wear suitable respiratory equipment. (filter P3)

8.2.3 Environmental exposure controls
Prevent product from entering the environment.

SECTION 9: Physical And Chemical Properties

9.1 Information on basic physical and chemical properties

General Information (appearance, odour)

Physical state	liquid, oily
Colour	colourless, clear
Odour	slightly pungent

Important health safety and environmental information

pH	< 1
Freezing point :	ca. -29 °C 75% H_2SO_4
	ca. -1 °C 98% H_2SO_4
Boiling point/boiling range	ca. 180 °C 75% H_2SO_4
Boiling point/boiling range	ca. 327 °C 98% H_2SO_4
Flash point	Not applicable
Explosive properties:	
Lower explosion limit	Not applicable
Upper explosion limit	Not applicable
Vapour pressure	0,17 hPa (20 °C) 75% H_2SO_4
	0,0121 Pa (20 °C) 98% H_2SO_4
Density	1,7 g/cm³ (20 °C)75% H_2SO_4
	1,8 g/cm³ (20 °C)98% H_2SO_4
Solubility(ies):	
Water solubility	completely soluble
Partition coefficient: n-octanol/water	inorganic compound

Thermal decomposition	> 300 °C
Viscosity:	
Viscosity, dynamic	ca. 16 mPa.s (20 °C) 75% H_2SO_4
	ca. 30 mPa.s (20 °C) 98% H_2SO_4
Oxidising	Not oxidizing

9.2 Other data

Surface tension	not determined

SECTION 10: Stability And Reactivity

10.1 Reactivity

Exothermic reaction with water.
Do not add water into strong acid (risk of splashes).

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions : Reacts with sulphide forming hydrogen sulphide, H_2S.
Gives off hydrogen by reaction with metals.
The forming of hydrogen gas in a closed space causes a danger of explosion.

10.4 Conditions to avoid

Conditions to avoid : High temperatures.

10.5 Incompatible materials

Materials to avoid : Flammable materials
: Bases chromates
: nitrates
: Sulphides
: Oxidising agents
: Paper and cotton carbonize quickly on the influence of sulphuric acid and can catch fire.

10.6 Hazardous decomposition products

Hazardous decomposition products : sulphuric acid vapour
sulphur dioxide

Thermal decomposition : >300 °C

SECTION 11: Toxicological Information

11.1 Information on toxicological effects

Acute toxicity

Sulfuric acid:
LD50/Oral/Rat: 2 140 mg/kg
LC50/Inhalation/4 h/Rat: 0,375 mg/l
Remarks: aerosol
Although the LC50 values from the various inhalation toxicity studies performed with sulphuric acid theoretically trigger classification for Acute inhalation toxicity, classification is not proposed. The effects of sulphuric acid following inhalation are entirely due to local irritation of the respiratory tract: there is no evidence for the systemic toxicity of sulphuric acid in any study, as effects are limited to the site of contact. Classification for acute inhalation toxicity is not considered to be appropriate.

Irritation and corrosion

Sulfuric acid:
Skin: Corrosive
Causes severe burns.

Eyes: Corrosive
Risk of serious damage to eyes.

Sensitisation

Sulfuric acid**:**
Not sensitizing.

Long term toxicity

Sulfuric acid:
Repeated dose toxicity:
Inhalation/Rat/28 d:
NOAEL: = 0,0003 mg/l

Carcinogenicity
Inhalation/Rat:
Did not show carcinogenic effects in animal experiments.

Oral/Mouse:
Weak local carcinogen.

Mutagenicity mammalian cells (CHO)/Chromosome aberration test in vitro:
Result: positive
Metabolic activation: with and without Due to its pH.

Salmonella typhimurium (bacterium)/Ames test:
Result: negative
Metabolic activation: with and without
Reproductive toxicity
/Rabbit/Developmental toxicity test:
NOEL: = 0,020 mg/l
Did not show teratogenic effects in animal experiments.

SECTION 12: Ecological Information

12.1 Toxicity

Aquatic

toxicity

Remarks: May be harmful to aquatic organisms because of the low pH value.

Sulfuric acid:

LC50/96 h/Lepomis macrochirus (bluegill sunfish)/static test: 16 - 28 mg/l fresh water
EC50/48 h/Daphnia magna (Water flea)/static test/OECD Test Guideline 202: > 100 mg/l fresh water
EC50/72 h/Desmodesmus subspicatus (green algae)/static test/OECD Test Guideline 201: > 100 mg/l
Remarks: May be harmful to aquatic organisms because of the low pH value.

Toxicity to other organisms

Sulfuric acid:

NOEC/37 d/active sludge/static test: 26 g/l fresh water

NOEC/30 d/active sludge/static test: > 30 g/l fresh water

12.2 Persistence and degradability

Biological degradability:
Sulfuric acid:

The methods for determining biodegradability are not applicable to inorganic substances.

12.3 Bioaccumulative potential

Partition coefficient: n-octanol/water: inorganic compound

Sulfuric acid:
Does not bioaccumulate.

12.4 Mobility in soil

Mobility

Vapour pressure: 0,17 hPa (20 °C); 75% H_2SO_4
0,0121 Pa (20 °C); 98% H_2SO_4, Does not evaporate if spilled to the ground.

Water solubility: completely soluble
Surface tension: not determined

Soil moisture enhances mobility. May be partly neutralized in soil, but significant amounts may leach into the groundwater.

12.5. Results of PBT and vPvB assessment
This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

12.6. Other adverse effects

None known.

SECTION 13: Disposal Considerations

13.1 Waste treatment methods

Product Solutions with low pH-value must be neutralized before discharge. Acid must not be rinsed into a drain that might have water containing sulphide. Dispose of as special waste in compliance with local and national regulations. Clean container with water. Refer to manufacturer/supplier for information on recovery/recycling.

SECTION 14: Transport Information

14.1 UN number	1830
Land transport	
ADR:	
Description of the goods:	
14.2 UN proper shipping name	SULPHURIC ACID
14.3 Transport hazard class(es)	8
14.4 Packing group:	II
Classification code:	C1
Risk code	80
ADR/RID-Labels:	8
Sea transport	
IMDG:	
Description of the goods:	
14.2 UN proper shipping name	UN1830, SULPHURIC ACID
14.3 Transport hazard class(es):	8
14.4 Packing group:	II
IMDG-Labels:	8
14.5 Environmental hazards:	Not a Marine Pollutant
Air transport	
ICAO/IATA:	

Description of the goods

14.2 UN proper shipping name	UN1830, Sulphuric acid
14.3 Transport hazard class(es):	8
14.4 Packing group:	II
ICAO-Labels:	8

14.8 Special precautions for user
None known.

SECTION 15: Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Other regulations :Take note of Directive 96/82/EC on the control of major-accident hazards involving dangerous substances. The product belongs to at least one of the categories 1 through 11 mentioned in Annex 1 of the Directive 1996/82/EC concerning the control of major accident hazards.

Notification status

15.2 Chemical Safety Assessment

SECTION 16: Other Information

Full text of H-Statements referred to under section 3.
H314 Causes severe skin burns and eye damage.

Text of R-phrases mentioned in Section 3
R35 Causes severe burns.

Training advice
Read the safety data sheet before using the product.

Further information
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Sources of key data used to compile the Safety Data Sheet

Regulations, databases, literature, own tests.

Additions, Deletions, Revisions

Relevant changes have been marked with vertical lines.

End of Safety Data Sheet